

Fence

Barbed Wire

Virginia Conservation Practice Job Sheet

Code 382(a)



Definition

A constructed barrier to livestock, wildlife, or people.

Purpose

This job sheet is provided as a component of a resource conservation plan. This practice may be applied to contain and control livestock and wildlife movement, facilitate a prescribed grazing system, protect sensitive areas from grazing livestock, and to eliminate access to unsafe areas.

Conditions where Practice Applies

This practice may be used on any area where a fence is needed to control access, movement and containment of livestock and wildlife and where people safety and movement is of

concern. Conservation plan maps showing the approximate fence location, complementary conservation practices, grazing schedule, other relevant information, and additional specifications may be included.

Barbed wire fence is not recommended for horses.

General Criteria and Specifications

All fence construction shall comply with federal, state, and local fencing codes.

Fence Line Clearing

Fence lines will be cleared of brush and trees; gullies and steep banks may require grading. Clearing along stream banks will be held to a minimum and no vegetation may be removed within the buffer area, except as required for stream crossings.

Fencing materials shall be of a quality and durability that meets the intended management objectives. Construction shall be performed in a manner that meets the intended management objective. Wire and hardware will be new, galvanized material.

Line Post

Maximum spacing between line posts is 16.5 feet. All wooden line posts shall be set at least 24" into the ground.

Suitable line posts

3½" in diameter wooden posts of black locust, red cedar (mostly heartwood), redwood, and pressure treated pine or other wood of equal life and strength. Pressure treatment shall meet the requirements for ground contact.

Note: Landscaping timbers should not be used for post or brace assemblies.

Steel posts must be new, and be painted or galvanized and weigh a minimum of 1.25 pounds per one foot of length. Post will be driven 18" in the ground or as specified by manufacturer. Every 50 feet or 4th post will be wooden.

The following steel posts are acceptable for line posts:

Style 1 – "T" Section 1-3/8" x 1-3/8" x 1/8" thick

Style 2 – "U" Section 2" x 1-1/4" x 3/32"

Style 3 – "L" Section 2" x 2" x 1/4"

Lightweight stamped-steel posts are not allowed.

Brace Posts

Posts shall be set and maintained in a vertical position. All wooden brace posts are to be 5" minimum diameter and set 3 feet into the ground. Horizontal rail brace posts are to be 4" minimum diameter by 8 feet long and be installed 8"-12" below the top of the vertical brace post.

Note: Landscaping timbers should not be used for post or brace assemblies.

Corners and Braces

Refer to drawings on pages 7 through 9 for fence brace configurations and spacing.

Single H Braces

Single H Brace corners and end braces may only be installed at the ends of straight fence spans of 165 feet or less.

Double H Braces

All corners, fence line ends and gate openings require Double H Brace assemblies, except that Single H Braces may be substituted in straight fence spans of 165 feet or less.

Double H Brace Pull Assemblies

Double H Brace pull assemblies are required in straight fence spans at a maximum spacing of 660 feet. Brace wire shall be high tensile, galvanized steel, or 9 gauge soft wire.

Adjoining Fences

A fence adjoining an existing fence must terminate in a brace assembly as required above.

Corners

A bend in the fence tighter than 20 degrees is considered a corner and not a "straight" pull brace. (In an 8-foot long brace section, 20 degrees is approximately 3 feet off the straight line. Refer to drawings). The above H brace rules apply to corners considering each wire-pull direction from the corner post.

Combination single and double H corners are permitted.

If hand set, all backfilled material shall be thoroughly tamped in 4" layers. Post holes shall be at least 6" larger than the diameter or side dimension of the posts. Synthetic posts are to be installed as specified by the manufacturer. If concrete backfill is used, the concrete must be pre-mixed, and worked into place up to the ground surface. No stress shall be applied to posts set in concrete for at least 24 hours after the concrete has set.

Wire

All barbed wire shall consist of 2 strands of wire with class 3 galvanized 4-point barbs spaced not more than 5" apart. Galvanized barbed wire shall be fabricated from 12-1/2 gauge class 1 galvanized or better

or 15-1/2 gauge class 3 galvanized strand wire and shall meet the requirements of ASTM A121. HT Class 3 barbed 15 1/2 gauge wire meeting the requirement of ASTM A121 may also be used.

Wire Placement

Wires may be equally spaced or spaced according to figure 3.

Stretching Wire

Barbed Wire – Should be pulled taut. In warm weather, a stretch of 100 feet (prior to attaching to posts) should sag no more than 4” in the middle and no more than 2” in cold weather.

Attaching Fencing to Post

The fencing wire shall be placed on the livestock side of line posts and on the outside of corners and posts in bends and braces in bends.

Each strand of barbed wire shall be attached to each wooden post using 9-gauge galvanized 1½” staples, driven diagonally with the grain of the wood and at a slight downward angle (except in dips). Staples shall not be driven tight to the post.

Wire splices shall be crimped or spliced with 8 wraps around the other (“Western Union Splice”).

The fencing shall be fastened to steel line posts with either 2 turns of 14 gauge galvanized steel wire or the post manufacturer’s special wire clips.

Stays and Battens

If used, stays may be made of rot-resistant wood, plastic, fiberglass, or heavy galvanized twisted wire. Stays should be properly fastened to each fence wire. Stay length shall be sufficient for attachment to all fence wires while maintaining correct wire spacing.

Other Considerations

Approved alternative fence systems include “Common Sense Fence” or other equivalent fencing systems, approved by an NRCS Area Resource Conservationist (ARC), and installed to manufacturer’s recommendation as approved by Area ARC.

Alternative fencing and bracing systems: Alternative fencing and bracing systems must be pre-approved by an NRCS Area Resource Conservationist (ARC), and must be installed according to manufacturer’s recommendations as approved by the ARC.

Fences across gullies or streams require special braces and design. Breakaway fences or swinging water gaps allow debris and water to flow past the fence line without destroying the adjacent fence.

Any permanent fencing for grazing livestock should allow flexibility to facilitate implementation of the grazing plan and permit land management activities such as nutrient application, pest control, forage harvest, and other appropriate practices.

Follow all manufacturers’ safety precautions for handling and installing fencing materials.

Locate fences to facilitate maintenance. Where applicable, clear right of ways should be established and maintained to facilitate fence construction and maintenance.

When possible, install fences across slopes to improve grazing distribution, rainfall infiltration, and reduce soil erosion.

Locate fences to facilitate livestock management, handling, watering, and feeding.

Consider placing permanent riparian stream fencing at the edge of the protected buffer or at least 2 times the active channel width from the top of the stream bank but never less than 10 feet. It is recommended that the stream fence have a maintenance gate installed.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See Conservation Practice Standard *Fence* (382).

Client:	Farm #:
Field(s):	Tract #:
Planned By:	Location:
Date:	Length of Fence:
Landowner Objectives:	

Purpose (check all that apply)	
<input type="checkbox"/> Reduce erosion and improve water quality by controlling livestock access to streams, springs, wetlands, and ponds.	<input type="checkbox"/> Protect sensitive environmental areas and the flora from vehicular, pedestrian, or animal traffic use.
<input type="checkbox"/> Protect newly planted areas from disturbance until established.	<input type="checkbox"/> Protect the safety of people, livestock, and wildlife by limiting or denying access to hazardous areas.
<input type="checkbox"/> Facilitate handling, movement, and feeding of livestock in the pasture environment.	<input type="checkbox"/> Improve distribution and timing of livestock grazing.
<input type="checkbox"/> Other (specify)	

Type of Fence (Check all that apply)		
<input type="checkbox"/> 3-strand barbed wire <input type="checkbox"/> 6- strand barbed wire	<input type="checkbox"/> 4-strand barbed wire <input type="checkbox"/> 8- strand barbed wire	<input type="checkbox"/> 5-strand barbed wire <input type="checkbox"/>
Posts		
Type Black Locust, Eastern red cedar <div style="text-align: center;">OR</div> pressure treated pine or other preservative treated wood* <div style="text-align: center;">OR</div> standard steel line posts every 50 feet or 4 th post will be wooden	Size Line posts are wood 6½ feet or longer 3½" minimum diameter <div style="text-align: center;">OR</div> Standard steel line post 1 ³ / ₈ " x 1 ³ / ₈ " x 1 ¹ / ₈ ", with anchor plate	Spacing Wood line posts spaced a maximum of 16½ feet apart set 2 feet deep minimum <div style="text-align: center;">OR</div> Steel line posts spaced a maximum of 16½ feet apart set to top of anchor plate or 18" w/wooden post every 50 feet on 4 th post.
Braces		
Wooden Braces (8 feet minimum length) 4" diameter at small end *	Brace Wire High Tensile, Galvanized Steel, 9 Gauge OR 12½ Gauge High Tensile, Galvanized, Double Wrapped	

*Landscaping timbers should not be used.

Operation and Maintenance

Inspections and maintenance are required to achieve the intended function, benefits, and life of the practice. The landowner/operator is responsible to establish and implement an inspection and maintenance program. Regular inspection of fences should be part of an ongoing maintenance program. Items to inspect and maintain during the 20-year design life of the practice include, but are not limited to, the following:

1. Inspection of fences after storm events is necessary to ensure the continued proper function of the fence. Promptly repair or replace damaged or broken fencing.
2. Retain and properly discard all broken fencing material and hardware to prevent ingestion by animals or injury to equipment, people, or animals.
3. Remove debris collected in the fencing.
4. Clear the brush from fence lines to reduce voltage loss. Vegetative control can be achieved by herbicides applied per the manufacturer's label.
5. Remove fallen limbs and maintain proper tension on the fence wires. Overhanging trees and limbs should be trimmed or removed as needed.
6. Maintain proper tension on the fence wires.
7. Follow your grazing plan, where appropriate.
8. All necessary precautions should be taken to ensure the safety of construction and maintenance crews.

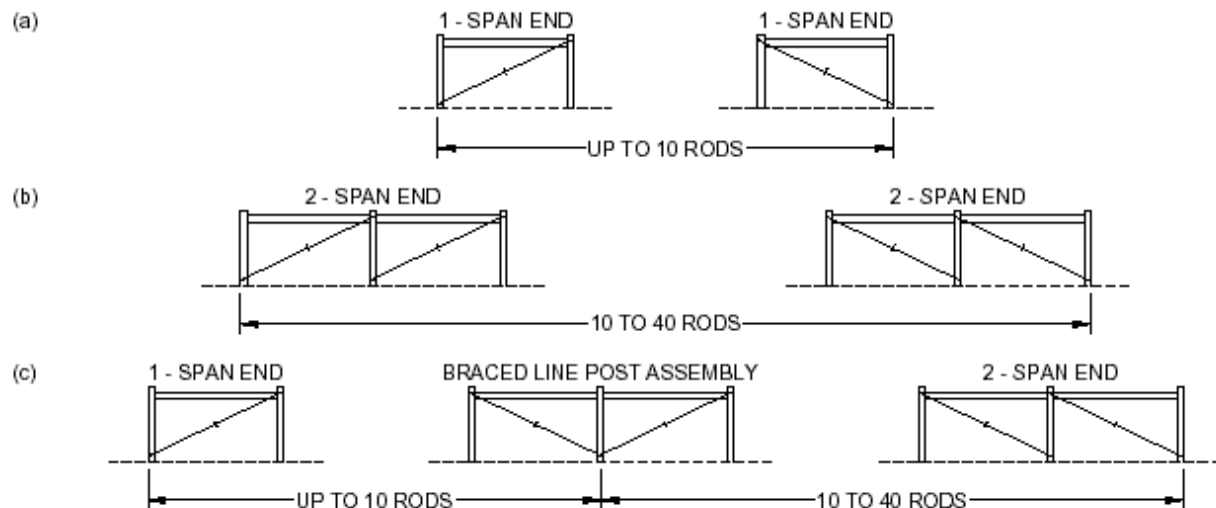
Other:

For information regarding this practice contact:

at _____.

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STRAIGHT FENCES ON FLAT LAND



STRAIGHT FENCES ON ROLLING LAND

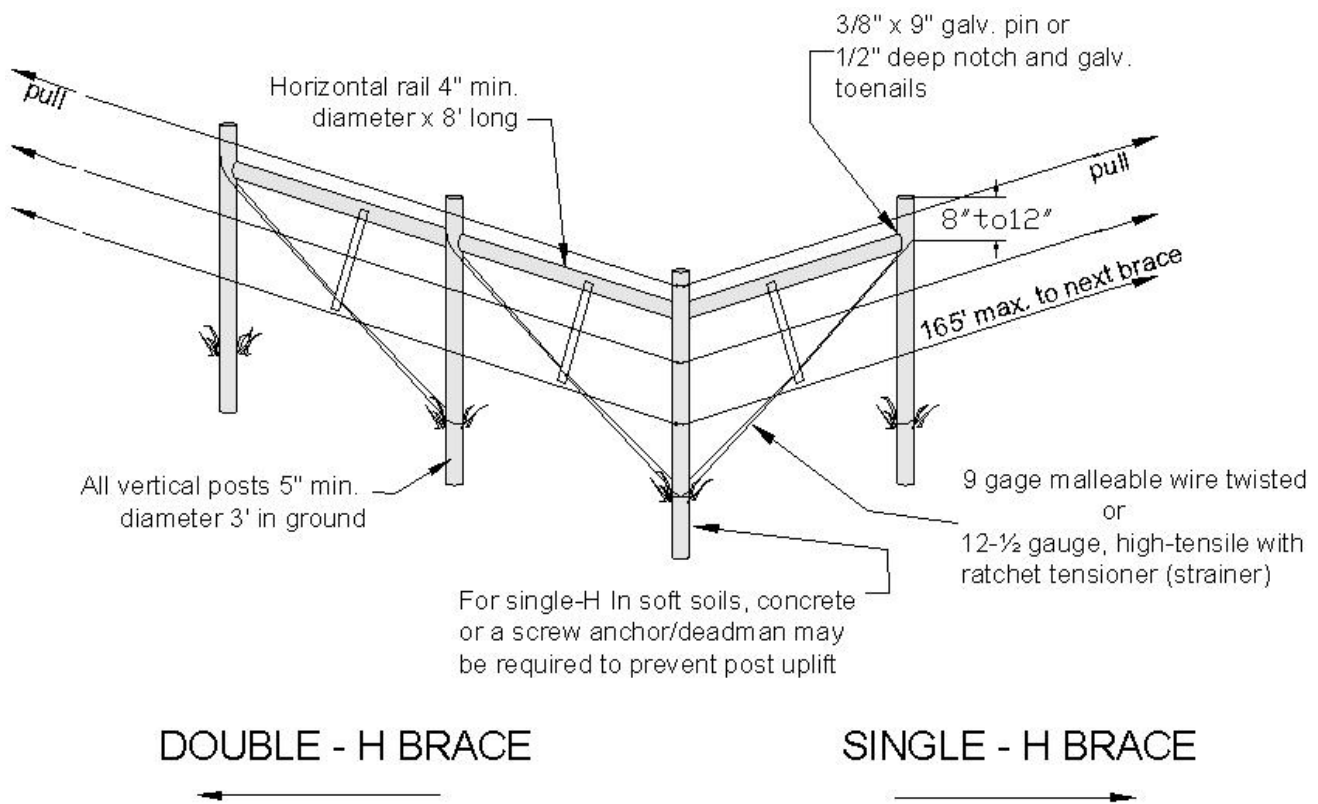


CURVED FENCES



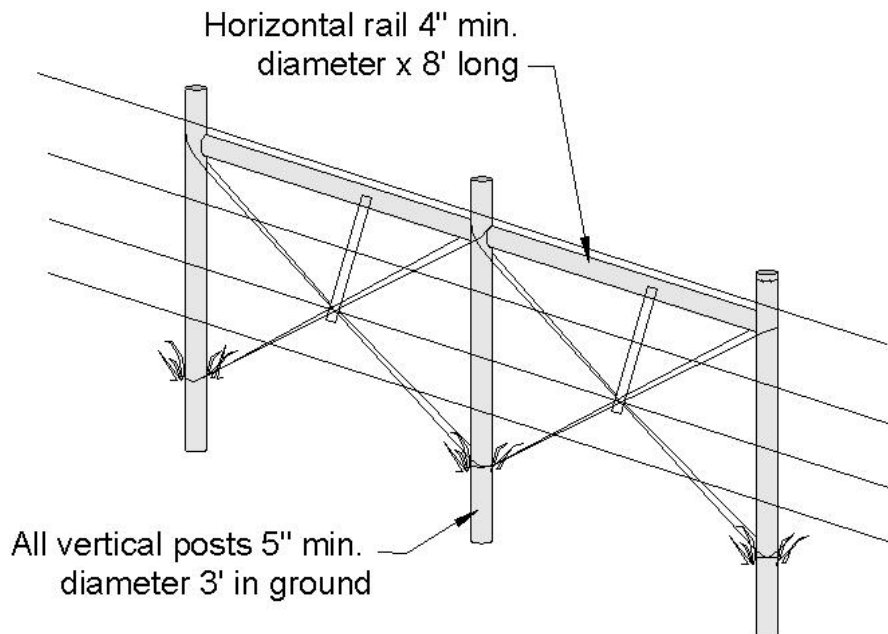
Types of anchor and brace assemblies and where to locate them: (a) For fence lengths of 10 rods (165 feet) or less, use single-span end construction. (b) For fence lengths of 10 to 40 rods (165 to 660 feet), use double span end construction. (c) For fences more than 40 rods (660 feet) long use a braced-line-post assembly to divide the fence lengths. (d) On rolling land, fence stretching is easier if braced line-post assemblies are located at the foot and top of each hill. (e) Contour fences, more than 20 rods (330 feet) long, should have a braced-line-post assembly installed to keep the stretches to 20 rods (330 feet) or less. Install in straight section at least one post span away from a curve. Do not install on a curve.

Note: One rod equals 16 ½ feet.



Typical Combination Corner Brace Assembly

Figure 1



Double - H Brace Pull Assembly

Figure 2

SUGGESTED SPACING FOR BARBED WIRE

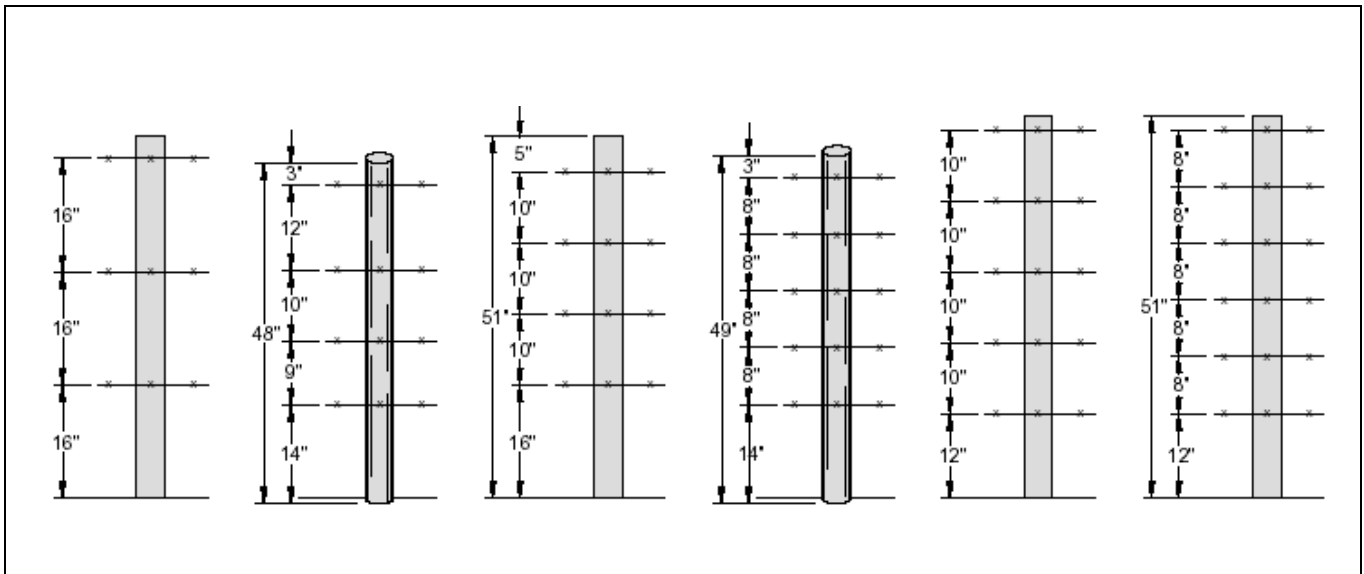
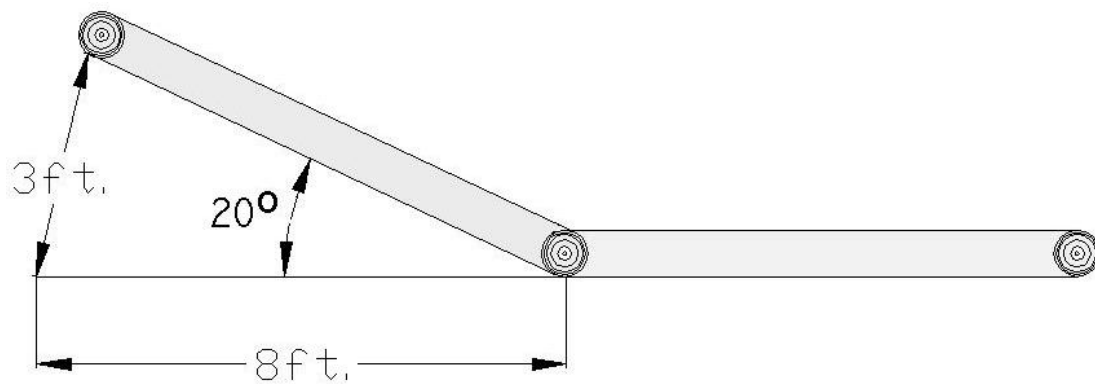


Figure 3



Top View of Fence Brace Showing Minimum Angle to be Considered a Corner

Figure 4